IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

1. (Currently amended) A sample separation apparatus, comprising:

a substantially solid substrate ~~comprising at least one of silicon, gallium arsenide, and indium phosphide~~;

matrices formed in said substrate, ~~said~~the matrices comprising at least two distinct, unconnected porous regions comprising the same material as the substrate, each of ~~said~~the at least two porous regions extending at least partially across ~~said~~the substrate; and

at least one detector ~~comprising a thermal detector, a field effect transistor, or a voltage application component and a current detection component~~ fabricated on ~~said~~the substrate in communication with at least one of ~~said~~the at least two porous regions.

2. (Canceled)

3. (Currently amended) The sample separation apparatus of claim 1, wherein each of ~~said~~the at least two porous regions comprises a capillary column.

4. (Currently amended) The sample separation apparatus of claim 1, wherein each of ~~said~~the at least two porous regions linearly traverses ~~said~~the substrate.

5. (Currently amended) The sample separation apparatus of claim 1, wherein one of ~~said~~the at least two porous regions extends only partially across ~~said~~the substrate.

6. (Currently amended) The sample separation apparatus of claim 5, wherein one of ~~said~~the at least two porous regions comprises a control column.

7. (Currently amended) The sample separation apparatus of claim 1, further comprising a reaction region immediately situated along a length of and contiguous with at least one of ~~said~~the at least two porous regions.

8. (Currently amended) The sample separation apparatus of claim 7, wherein ~~said~~the reactant region comprises a capture component.

9. (Currently amended) The sample separation apparatus of claim 7, wherein ~~said~~the reaction region is situated at a predetermined distance from an end of ~~said~~the at least one porous region.

10. (Currently amended) The sample separation apparatus of claim 5, further comprising reaction regions situated immediately along lengths of each of ~~said~~the at least two porous regions.

11. (Currently amended) The sample separation apparatus of claim 10, wherein a distance between a first of ~~said~~the reaction regions and an end of a first of ~~said~~the at least two porous regions is substantially the same as a distance between a second of ~~said~~the reaction regions and an end of a second of ~~said~~the at least two porous regions.

12. (Canceled)

13. (Currently amended) The sample separation apparatus of claim 1, wherein ~~said~~the at least one detector comprises a thermal detector.

14. (Currently amended) The sample separation apparatus of claim 1, wherein ~~said~~the at least one detector comprises a field effect transistor.

15. (Currently amended) The sample separation apparatus of claim 1, wherein ~~said~~the at least one detector comprises a voltage application component and a current detection component.

16. (Currently amended) The sample separation apparatus of claim 1, further comprising a processor on ~~said~~the substrate.

17. (Currently amended) The sample separation apparatus of claim 1, further comprising a memory device on ~~said~~the substrate.

18. (Currently amended) The sample separation apparatus of claim 1, further comprising a migration facilitator in communication with at least one of ~~said~~the at least two porous regions.

19. (Currently amended) The sample separation apparatus of claim 18, wherein ~~said~~the migration facilitator comprises a pump in communication with a first end of ~~said~~the at least one porous region.

20. (Currently amended) The sample separation apparatus of claim 19, further comprising a control valve situated between ~~said~~the pump and ~~said~~the first end.

21. (Currently amended) The sample separation apparatus of claim 18, wherein ~~said~~the migration facilitator comprises a vacuum source operatively in communication with a second end of ~~said~~the at least one porous region.

22. (Currently amended) The sample separation apparatus of claim 18, wherein ~~said~~the migration facilitator comprises a first electrode adjacent ~~said~~the first end of ~~said~~the at least one porous region and a second electrode adjacent a second end of ~~said~~the at least one porous region.

23. (Currently amended) The sample separation apparatus of claim 22, wherein ~~said~~the first electrode is a cathode.

24. (Currently amended) The sample separation apparatus of claim 22, wherein ~~said~~the second electrode is an anode.

25. (Currently amended) The sample separation apparatus of claim 1, further comprising a stationary phase disposed in at least one of ~~said~~the matrices.

26. (Currently amended) The sample separation apparatus of claim 25, wherein ~~said~~the stationary phase comprises a capture substrate.

27. (Currently amended) The sample separation apparatus of claim 26, wherein ~~said~~the capture substrate comprises an antibody.

28. (Currently amended) The sample separation apparatus of claim 26, wherein ~~said~~the capture substrate comprises an antigen.

29. (Currently amended) The sample separation apparatus of claim 1, further comprising a sealing element situated over at least a portion of at least one of ~~said~~the at least two porous regions.

30-110 (Canceled)

111. (New) The sample separation apparatus of claim 1, wherein the substrate comprises a semiconductor material.

112. (New) The sample separation apparatus of claim 111, wherein the semiconductor material comprises silicon, gallium arsenide, or indium phosphide.